REMARKS

The Official Action mailed March 10, 2010, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to July 10, 2010. Also, filed concurrently herewith is a *Request for Continued Examination*. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on June 5, 2006; September 18, 2006; September 11, 2008; and January 28, 2009.

Claims 13-24 were pending in the present application prior to the above amendment. Claims 13-24 have been canceled without prejudice or disclaimer, and new claims 25-34 have been added to recite additional protection to which the Applicant is entitled. Accordingly, claims 25-34 are now pending in the present application, of which claims 25, 31, 33 and 34 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action objects to claim 18 asserting that the recitation "'protected to the redundant bit addition unit' is not clear in meaning" (page 2, Paper No. 20100301). In response, claim 18 has been canceled without prejudice or disclaimer. Also, in new claims 25 and 30, the term "redundant bit addition unit" is believed to be clear in meaning. Accordingly, reconsideration and withdrawal of the objections are in order and respectfully requested.

Paragraph 5 of the Official Action rejects claims 13, 20, 23 and 24 under 35 U.S.C. § 112, first paragraph, asserting the following:

> ... claims 13, 20, 23 and 24 recite "wherein the redundant bit unit operates to select a redundant bit to be added a bit being common to both symbol data located at a positive position and symbol data located at a negative position out of the Gray coded 4-level symbols, the positive position and the negative position being away in deviation furthest from each other",

which is not disclosed in the original application, therefore, it is considered a new matter.

In response, claims 13, 20, 23 and 24 have been canceled without prejudice or disclaimer. Also, as noted in detail below, new claims 25-34 are fully supported in the present specification. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, second paragraph, are in order and respectfully requested.

Paragraph 7 of the Official Action rejects claims 13-24 as obvious based on the combination of U.S. Patent No. 5,214,656 to Chung and U.S. Patent No. 5,677,681 to Tanaka and U.S. Patent No. 4,984,191 to Vermesse. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2144.04, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Specifically, new independent claims 25 and 33

(directed to transmission device and method, respectively) recite the following: inputting original data arranged in order from one with highest importance, the original data comprising first data and second data after the first data, the first data being to be protected and the second data being to be unprotected, to divide the first data into first bit data by one bit and divides the second data into second bit data by two bits; and adding a redundant bit as a lower order bit to each of the first bit data as a higher order bit to create 2 bits data which results in a symbol having any one of two symbol values whose gain is higher at the Nyquist point, of four symbol values used to transmit the original data.

These features are supported in the present specification, for example, as follows: "Each bit data of the voice data has been sorted in a descending order of a significance level for the auditory sense of human. The voice data is configured with 18 bits of protected voice data and 26 bits of unprotected voice data" (page 8, lines 18-22). "Back to Figure 1, the division unit 12 is provided with the data of the voice vocoder as shown in Figure 2, and divides the provided data by one bit. As described above, it should be noted that the bits considered to have the high significance level may be previously determined by verifying or simulating the algorithm of the vocoder and the like, and that the bits of the voice vocoder data have been arranged in the descending order of the significance level" (page 10, lines 9-17). "The bit conversion unit 25 converts the symbol value, which has been judged by the symbol decision unit 24, into bits of a bit value based on the symbol value. As shown in Figure 4, if the symbol value, which has been judged by the symbol decision unit 24, is +3, the bit conversion unit 25 converts the symbol value +3 into the bit value '0,1'. If the symbol value is +1, the bit conversion unit 25 converts the symbol value +1 into the bit value '0,0'. If the symbol value is -1, the bit conversion unit 25 converts the symbol value -1 into the bit value '1,0'. If the symbol value is -3, the bit conversion unit 25 converts the symbol value -3 into the bit value '1,1'. It should be noted that the arrangement of the bits, which have been bit-converted by the bit conversion unit 25, has become a Gray code" (page 12,

line 23, to page 13, line 7). "As shown in Figure 5 at (c), by adding the redundant bit '1' to each bit data of the protected voice data by the redundant bit addition unit 13, the bit data of the protected voice data certainly would correspond to the symbol value +3 or -3. In other words, an interval between the symbol value +3 and the symbol value -3 becomes large, thereby a gain at the Nyquist point becomes large" (page 13, line 28, to page 14, line 5).

Regarding the dividing process, as disclosed, for example, at page 8, lines 18-22, and at page 10, lines 9-17, it is clear that the "original data" is arranged in order from one with highest importance, and the present specification discloses how to divide the data (page 13, lines 17-23, with reference to Figures 5(a) and 5(b)). Regarding the redundant bit adding process, in the present specification, a series of techniques of the present invention are explained; therefore, the relationship between reception symbols and data bit (as disclosed, for example, at page 12, line 23, to page 13, line 7) is common to the explanation for a transmission process (as disclosed, for example, at page 13, line 28, to page 14, line 5). From the above descriptions in the specification, it is clear that the symbol values "-3" and "+3" are symbol values for which a Euclidean distance between their symbols becomes largest.

In the present invention, important data is divided by one bit, and the addition of a redundant bit "1" to the important data bit results in creating symbol values "-3" if (important bit, redundant bit) is (1,1) and "+3" if (important bit, redundant bit) is (0,1). Also, it is clear that the larger the symbol value is, the larger a gain at the Nyquist point becomes, and the symbols of important data, whose gain at the Nyquist point is large, are received on the reception side; therefore, it is possible to make an error correction even if communication conditions in a transmission path are relatively poor.

The Applicant respectfully submits that Chung, Tanaka and Vermesse, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

Since Chung, Tanaka and Vermesse do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized to charge fees under 37 C.F.R. §§ 1.16, 1.17, 1.20(a), 1.20(b), 1.20(c), and 1.20(d) (except the Issue Fee) which may be required now or hereafter, or credit any overpayment to Deposit Account No. 50-2280.

Respectfully submitted,

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